



**Determining an Aggregate Quality to Outrank
SMEs under Economics Distress: a Multicriteria Analysis
Extension of the DuPont Model**

Elvis Hernandez

Advisor- Prof. Ricardo Reis, PhD

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ABSTRACT

This research presents a newly manner to determine an Aggregate Quality (AQ), and consequently a global ranking, of Small and Median Enterprises (SMEs) based upon an integration of the traditional Return on Equity (ROE) or DuPont decomposition into Multicriteria Analysis methods. This approach designs and implements a method named ED-ROE, which is shown as a complementary way to evaluate companies' ROE (profitability) and to mitigate some imbalances and inconsistencies presented by the traditional DuPont system under economic distress. Therefore, it goes beyond the well-known financial distress because considers not only debt problems, but also other set of criteria (e.g. business risk, operational risk and financial risk) that create a state of concern and worry on Decision Makers (shareholders and stakeholders).

The AQ obtained from the ED-ROE approach, which is also a measurement of a company's performance, relies on PROMETHÉE methods (Preference Ranking Organization Method for Enrichment Evaluations), and bases their results on outranking relationships in order to provide accurate information for comparing and evaluating SMEs under distressed environments and multiple decision criteria.

The research also introduces some regression models to compare the ED-ROE approach and the DuPont system in terms of their outcomes, consistency, statistical significance, and explanatory power. Summarizing, the main research scope is to provide more elements to justify the decision making process, and offer, at least in the short term, the decision to choose the best SMEs in order to characterize a specific sector or economic activity. The AQ assessment also helps to identify companies that have a good operating management (net profit margin), strong asset management (asset turnover) and outstanding capital management throughout a simultaneously coherent leverage level.

Keywords: *ED-ROE algorithm, Multicriteria Analysis, DuPont Decomposition, PROMETHÉE Methods, Economic Distress, Financial Distress, Aggregate Quality, Global Ranking.*